The Impact of Self-assessment on Provider Performance in Mali

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Abstract

This study was a cross-sectional, case-control study testing the impact of self-assessment on quality of care in a peri-urban area in Mali. The two indicators of interest were compliance with fever care standards and compliance with structural quality standards. The study examined 36 providers, 12 who were part of the intervention and 24 who were part of the control group over a three-month period from May 2001 through July 2001. Overall, the research team found a significant difference between the intervention and control groups in terms of overall compliance ($p<0.001$) and in terms of assessment of fever ($p<0.005$). The total costs for the intervention for 36 providers was less than US\$250, which translated to approximately \$6 per provider. The data appear to suggest that self-assessment, when used in a regular fashion, can have a significant effect on compliance with standards. Future research on self-assessment should include a larger sample of providers and should examine the impact of self-assessment over time.

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Acronyms

IMCI	Integrated Management for Childhood Illness
IPE	The Equity Intiative in Mali *(L'Initiative pour L'Équité au Mali)*
MOH	Ministry of Health
PHR*plus*	Partners for Health Reform*plus*
QAP	Quality Assurance Project
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

Acknowledgments

Executive Summary

Improving quality of clinical care in developing country settings is a difficult task, both in public sector settings where supervision is infrequent and in private sector settings where supervision and certification are non-existent. This study tested a low-cost method, self-assessment, for improving the quality of care providers offer in a peri-urban area in Mali. The study was a cross-sectional, case-control study on the impact of self-assessment on compliance with quality of care standards. The two indicators of interest were compliance with fever care standards and compliance with structural quality standards. Both standards were derived from the Ministry of Health of Mali's standards for health care delivery. The study examined 36 providers, 12 who were part of the intervention and 24 who were part of the control group over a three-month period from May 2001 through July 2001. Overall, the research team found a significant difference between the intervention and control groups in terms of overall compliance ($p<0.001$) and in terms of assessment of fever ($p<0.005$). The total costs for the intervention for 36 providers was less than US$250, which translated to approximately $6 per provider. The data appear to suggest that self-assessment, when used in a regular fashion, can have a significant effect on compliance with standards. However, it is clear that self-assessment is not a resource-neutral intervention. All of the individuals from the intervention pool interviewed cited the extra work that they had to do to comply with the intervention protocol as a burden. In particular, study participants put an emphasis on the "long duration" of the study that "discouraged" the study participants. Future research on self-assessment should include a larger sample of providers and should examine the impact of self-assessment over time.

1. Background

The goal of improving health care delivery is an oft-cited one in the field of international health, with an emphasis frequently on the improvement of quality of care. One particular area of emphasis in quality improvement programs in developing countries recently has been improving providers' performance. However, the logistics and costs of formal quality improvement programs and the frequent lack of ongoing supervision have meant that sustained improvements in provider performance have been difficult to realize. This study tested a low-cost method, self-assessment, for improving the quality of care providers offer in a peri-urban area in Mali. Of interest was whether self-assessment had a significant impact on providers' compliance with local standards for fever care.

The field of quality assurance in health has developed around a focus on improving providers' compliance with evidence-based standards in order to improve health outcomes (Grimshaw and Russell 1993). However, achieving compliance with standards is often elusive, particularly in the developing country health system settings. Developing country health systems information systems often collect basic system statistics such as utilization and coverage rates. Actual provider performance, as measured by providers' compliance with standards, is assessed relatively infrequently, although existing research has highlighted overall low levels of compliance with accepted clinical standards in developing country settings (Heiby, 1998). A summary of classifications of interventions to achieve performance according to standards published by the Quality Assurance Project presents the following categories and types of interventions (Marquez, 2001):

Information transfer – educational materials, training, mass media

Learning through social influence – opinion leaders, individual instruction, patient-mediated interventions, peer review and support

Information linked to performance – reminders, audit and feedback

Management support – organizational interventions, incentives, regulations

The self-assessment model used in this study combines several aspects of reminders and peer review and support from the above classification scheme. Self-assessment is generally defined as the observation of behavior, evaluation of behavior and reaction to evaluation (Levine 1980). One key to this definition is the element of reaction and processing of information of data in which the self-assessor must engage. Some of the cited benefits of this process are (Marienau 1999):

Learning from experience

Functioning more effectively

Strengthening commitment to competent performance

Fostering self-agency and authority

Of note is that these benefits do not include data on performance. There is considerable disagreement in the literature on self-assessment as to its use in either formative or summative ways (Best, et al. 1990, Arthur 1995, Henbest and Fehrsen 1985, Flood 1998). This study used self-assessment as a performance improvement intervention, not to gather data on actual performance. More details on this are presented in the next section. Finally, one of the most notable gaps in the self-assessment literature is the general lack of information on self-assessment in developing country settings (Marquez, 2001). This study was undertaken under the auspices of The Equity Initiative in Mali (*L'Initiative pour L'Équité au Mali* – IPE). The IPE is supported by USAID through PHR*plus* in partnership with: the Quality Assurance Project (QAP); the Ministry of Health (MOH); UNICEF. The IPE grew out of a larger African and, in particular, West African regional movement to study and mitigate the adverse effects of cost recovery on utilization of health services by poor and vulnerable groups. The relationship between cost recovery and equity remains ambiguous. The World Bank, among others, has argued that charging for services that benefit only the recipient will result in a more efficient consumption of those services while increasing the availability of public resources for services with positive externalities, such as immunizations, prenatal and maternal care (Shaw and Ainsworth 1996). In practice, however, the introduction of user payments without effective protection mechanisms may have a negative impact on the poor. Evidence demonstrates that the impact of cost recovery on access and equity depends on how the initiatives are designed and implemented (Leighton 1995).

In June 1997, the Economic Commission for Africa, the United Nations, several governments, and the World Bank organized a conference to study cost recovery in the social sectors. Government representatives from 17 sub-Saharan African countries, non-governmental organizations, and bilateral and multilateral organizations participated. The conference culminated in the signing of the "Addis Ababa Consensus" that stated that while cost recovery is necessary, it may have an impact on equity, quality, and access, especially for the poor. The consensus outlined 15 principles, several calling for community participation in cost recovery systems and improved access and solidarity mechanisms to protect the poor.

The IPE took this consensus statement as a hypothesis to be verified and studied to learn its dimensions. The IPE has three main objectives:

1. To help the government formulate strategies to improve (financial) access to health services in a context of cost recovery;

2. To help bring about a **higher utilization** of available health services, especially by poor and vulnerable populations;

3. Improving access to and utilization of quality health care services, especially for poor and vulnerable groups

In order to accomplish these objectives, the IPE team conducted a large household survey of 13,016 individuals and a large provider survey of 592 providers in the public, private and informal sectors in two sites in Mali. Households were asked questions to determine their socio-economic level, their choice of providers, how much they paid for care and their satisfaction with care. Providers were surveyed on services offered, prices charged, solidarity mechanisms used and quality of care offered. Providers were assessed with both interviews and direct observations.

The IPE originally did not have in its mandate to test practical approaches to improving quality of care. However, following the baseline data collection at providers, a number of gaps in quality of care were identified. In feeding back the findings on these gaps to providers in one of the sites,

Sikasso, providers stated their desire to implement strategies to address the gaps identified by the baseline survey. From this grew the intervention of self-assessment that was implemented in Sikasso over a three-month period.

2. Methods

This study was a cross-sectional, case-control study on the impact of self-assessment on compliance with quality of care standards. The two indicators of interest were compliance with fever care standards and compliance with structural quality standards. Both standards were derived from the Ministry of Health of Mali's standards for health care delivery. The indicators were defined as the number of tasks performed correctly (according to the standard) divided by the total number of tasks to be performed. Assessment was done by direct observation using trained observers who included clinical staff and senior evaluators who have worked with the IPE on two previous direct observation assessments.

The intervention of self-assessment was designed as a self-monitoring tool and peer feedback mechanism to improve the quality of care for fever and to improve some limited structural quality elements such as cleanliness of the facility and the availability of drugs. The tool was designed in two parts. Part A contained 17 questions addressed to the provider on care of fever. Once a week for three months, on Mondays, providers were asked to use the self-assessment instrument following the first person who presented with a fever. Prior to the consultation, the provider was to request the assistance of a colleague, who would sit in the consultation room and use a blank self-assessment form to note compliance by the provider with fever care standards. Then, following the consultation, the provider him or herself would fill out the self-assessment form for the consultation and he or she would discuss the results with their colleague. This addition of a peer assessment/feedback session was added in order to motivate providers to fill out the form correctly and to encourage absorption of the technical aspects of the standards.

Part B of the self-assessment form consisted of 33 questions on background statistics on the facility and compliance with structural quality standards for the health facility. These questions were divided into the following sections: services offered by the facility; supervision and oversight of the facility; drug, commodities and vaccine availability; quality of the physical space and equipment for the facility; and cleanliness and hygiene. This section was applied once per month by the in-charge of the facility with a colleague. This report will concentrate on presenting the findings from the use of Part A (compliance with fever care standards) of the tool, however, some selected results of Part B will also be presented.

In order to ensure compliance with the self-assessment regimen, the study team utilized a local study coordinator who ensured that forms were dropped off at each participating facility on Fridays. He then picked up the completed forms (which once a month included Part B) on Tuesdays. This ensured timely completion of the forms. A qualitative review of the process of implementing the study, as well as selected key informant interviews with study participants, were carried out separately by the study coordinator following the completion of the data collection. This information was used to explore some of the implementation issues surrounding self-assessment once the data analysis was completed on the impact of self-assessment.

3. Findings

The study examined 36 providers, 12 who were part of the intervention and 24 who were part of the control group. The intervention group was selected by the study team in consultation with the local study coordinator. These providers were then asked to participate in the study voluntarily and no provider refused participation. Because of the lack of a formal randomization scheme, however, the study team conducted analysis post-intervention to ensure that the intervention and control groups were comparable on all key variables. In addition, in order to attempt to get at average provider performance, each provider was observed three times as part of the post-intervention evaluation. The intervention and control groups were not found to have any differences in terms of type and training level of provider ($p=0.123$). The sample of providers studied in this study is presented in Table 1 below.

Table 1: Number of observations by provider type

Staff	Intervention (%)	Control (%)	Total (%)
Doctor, sr. nurse	24 (67)	33 (51)	57 (56)
Nurse, other health staff	12 (33)	34 (49)	46 (44)
Total	36 (100)	67 (100)	103 (100)

The research team examined the difference between the intervention and control groups in terms of compliance with fever care standards where the unit of analysis was the individual client-provider interaction. The data were analyzed in terms of overall compliance (total number of tasks correctly completed divided by total number of tasks to be performed). In addition, the research team analyzed subsections of the client-provider interaction, that is compliance with assessment standards and with counseling standards for the interaction. These are defined respectively as the total number of assessment/counseling tasks correctly assessed divided by the total number assessment/counseling tasks.

Overall, there was a significant difference between the intervention and control groups in terms of overall compliance ($p<0.001$) and in terms of assessment of fever ($p<0.005$). However, there was not a significant difference between the intervention and control groups in terms of counseling for fever care. Table 2 below summarizes these results. The number of client-provider interactions analyzed for each of these comparisons is 103.

Table 2: Impact of self-assessment on compliance

| | % Compliance with Standard | | |
	Intervention	Control	Significance
Overall	54	44	p<0.001
Assessment	52	40	p<0.005
Counseling	46	41	Not significant

n=103

The research team was concerned with the clustering effect of the provider variable when using the individual client-provider interaction as the unit of analysis. We first attempted to minimize this effect by obtaining the same number of data points per provider. Secondly, we analyzed average provider compliance (overall and assessment) as an outcome of interest. We found the same relationships between the use of self-assessment and higher overall compliance (p<0.01) as well as higher assessment compliance (p<0.01).

Analysis was also conducted on compliance with structural quality standards. In order to analyze this, an index of overall structural quality was developed. This included the following items: (a) if the facility had a stockout of essential drugs or vaccines in the previous month; (b) if the waiting rooms at the facility had adequate seating for patients; (c) if the facility had basic equipment available (stethoscope, thermometer, etc.); (d) if the facility had potable water, latrines, a place to wash hands, trash cans, and a place for disposing of hazardous waste; and (e) the cleanliness of the facility. An analysis of variance indicates that there is no difference between intervention facilities and non-intervention facilities in terms of compliance with structural quality standards (p=0.252).

Given the interest in developing a "low-cost" intervention for improving performance when the IPE began its work in quality of care, the research team also collected information on the cost of the self-assessment intervention. This intervention had very few cost areas associated with it, namely: transportation cost and per diem for the self-assessment coordinator (for forms distribution) and for reproduction of the forms. There were several other "one-time" costs, such as a short training session for the study coordinator. The cost analysis did not include the costs of the evaluation of the intervention. The total costs for the intervention for 36 providers was less than US$250, which translated to approximately $6 per provider.

4. Conclusions and Next Steps

This study addresses an important gap in the quality improvement and self-assessment literature, namely the use of self-assessment in a developing country setting. The data appear to suggest that self-assessment, when used in a regular fashion, can have a significant effect on compliance with standards. The attractiveness of self-assessment is, in part, due to the fact that it is useable where supervision is absent or infrequent. However, according to interviews carried out for the study's qualitative report, it is apparent that self-assessment is not a resource neutral intervention. All of the individuals from the intervention pool interviewed cited the extra work that they had to do to comply with the intervention protocol as a burden. In particular, study participants put an emphasis on the "long duration" of the study that "discouraged" the study participants. In addition, the reassignment of health workers who originally signed up to be part of the study group meant that the study coordinator had to repeat some of the sensitization work that the study team had done pre-intervention. The study coordinator cited the means of transportation put at his disposal by the study team and the willingness and interest of the district medical officer as key points that helped support the implementation of the intervention. It is apparent that certain factors need to be in place in order to facilitate the successful use of self-assessment as a performance improvement tool.

In addition to some of these considerations, this study has certain limitations in its findings. The self-assessment study was a subactivity within the larger IPE effort to address utilization of health services by poor and disadvantaged groups in Mali. Studying methods of improving quality of care was not the original mandate of the IPE, and therefore this study is relatively small in scope and in sample size. Future research on self-assessment should include a larger sample of providers and should include non-urban/non-peri-urban districts. The lack of impact on compliance with structural quality standards may be related to the standards themselves as much as the tool. Compliance with structural quality of care standards such as the ones used in this study may be more difficult to achieve given the nature of the standards, which tend to depend on the collective management of the health facility and, to some extent, resources available.

This research indicates that self-assessment has an impact on performance. However, this impact was only measured three months post-intervention. In many cases, compliance with standards has been shown to decrease over time following training or another performance intervention (Kelley, 2001). More information is needed on how performance changes over time following the use of self-assessment. Additional work could be envisioned that would target ongoing problem areas of performance for a new self-assessment tool. Finally, future evaluations of self-assessment should employ a panel design that would give a picture of the intervention and control groups before and after the intervention rather than the cross-sectional design used in this study. Baseline information was gathered on study participants in both groups pre-intervention, however, the aforementioned reassignment of health workers to new posts meant that this baseline data could not be used. An

analysis of providers who were part of the baseline and post-intervention tests seems to indicate that there was no difference between the intervention and control groups pre-intervention.[1]

Despite all of these caveats, the data seem to indicate that self-assessment should be considered as a possible intervention to address low performance, particularly given its low cost. Similar work by the Quality Assurance Project in Niger in 1998 costed interventions for the implementation and support of the Integrated Management for Childhood Illness (IMCI). The IMCI standards for fever care were in part adopted by the Mali Ministry of Health and were used in this study. In Niger, for some context on performance improvement costs, IMCI training was $430 per health worker and an external assessment and feedback intervention was $108 per health worker. Future work in Mali by the IPE and PHR*plus* will involve disseminating these findings and trying to link self-assessment to the larger work on improving utilization of quality health services by poor and disadvantaged groups. Finally, PHR*plus* is working in other countries in the region, namely Ghana and Senegal, on the implementation of mutual health organizations as a health financing intervention to address equity problems in these countries health systems. The use of self-assessment could be a key element of ensuring that these community health-financing organizations offer their clients access to quality health services in the developing country context.

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[1] The providers who eventually were assigned to the intervention group had an average 51% overall compliance rate while providers who were in the control group had an average 58% overall compliance rate

Annex A: References

Arthur, H. 1995. Student self-evaluations: How useful? How valid: *International Journal of Nursing Studies* 32(3): 271-76.

Best, M., R.J.B. Carswell, and S.D. Abott. 1990 Self-evaluation for nursing students. *Nursing Outlook* 38 (4): 172-77.

Flood S.C. 1998. Using qualitative self-evaluation in rating physician performance. *Family Practice Management* 5(5): 22-24, 27-30, 33-34.

Grimshaw, J.M. and I.T. Russell. 1994. Achieving health gain through clinical guidelines II: Ensuring guidelines change medical practice. *Quality in Health Care* 3: 45-52.

Heiby, J.R. 1998. Quality improvement and the integrated management of childhood illness: Lessons from developing countries. *Journal on Quality Improvement* 25: 264-79.

Henbest, R.J., and G.S. Fehrsen. 1985. Preliminary study at the medical university of Southern Africa on student self-assessment as a means of evaluation. *Journal of Medical Education* 60(1): 66-68.

Kelley, E. 2001. Improving performance with clinical standards: the impact of feedback on compliance with the Integrated Management of Childhood Illness algorithm in Niger, West Africa. *International Journal for Health Planning and Management* 16: 195-202.

Leighton, C., and Diop, F. August 1995. *Protecting the Poor in Africa: Impact of Means Testing on Equity in the Health Sector in Burkina Faso, Niger, and Senegal.* Prepared for the Health Financing and Sustainability Project, contracted to Abt Associates and supported by the Office of Health and Nutrition, USAID Global Bureau.

Levine, E.L. 1980. Introductory remarks fo the symposium "Organization applications of self-appraisal and self-assessment: Another look." *Personnel Psychology* 33:59.

Marienau, C. 1990. Self-assessment at work: Outcomes of adult learners' reflections on practice. *Adult Education Quarterly* 49(3): 135-46.

Marquez, L. 2001. *Helping healthcare providers perform according to standards.* Operations Research Issue Paper 2(3). Bethesda, MD: Published for the U.S. Agency for International Development (USAID) by the Quality Assurance Project.

Shaw, R., and Ainsworth, M., eds., January 1996. Financing Health Services Through User Fees and Insurance: Case Studies from Sub-Saharan Africa. *World Bank Discussion Papers, Africa Technical Department Series*: The World Bank.